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Models 330 & 360 OPERATE DELAY RELAY



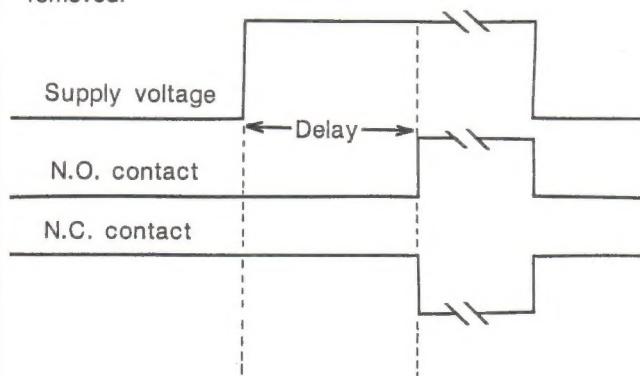
UL Recognized
File No. 60400

DESCRIPTION

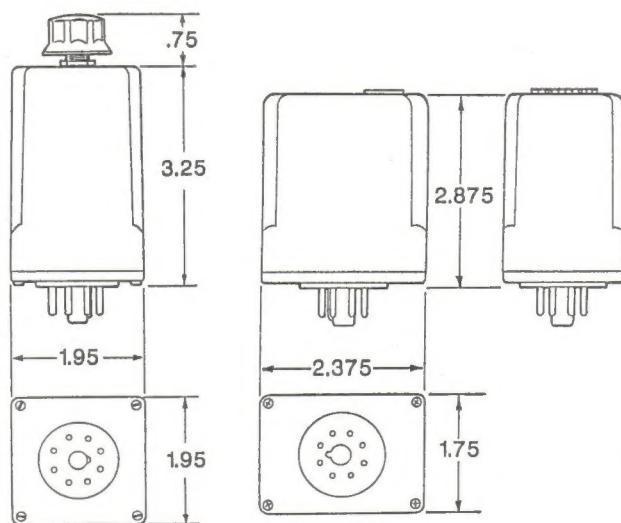
330 and 360 Operate Delay Relays are designed for a wide range of industrial applications. Examples include automatic and machine tool control circuits, HVAC circuits and warm up delay circuits. The 330 is a low cost, knob adjustable, R-C timer. The 360 is an intermediate priced, high accuracy, digital timer. In both units a solid-state timing circuit drives a double-pole, double-throw (DPDT) electromechanical relay. Both timers are available in a variety of voltage and timing ranges. Wiring configurations are the same for interchangeability. The 330 is UL Recognized in all voltage ranges; the 360 is UL Recognized at supply voltages of 120V or less.

OPERATION

The time delay begins when the supply voltage is applied. Upon completion of the delay period, the internal relay will energize and remain energized until the supply voltage is removed.



DIMENSIONS



SPECIFICATIONS

Model no.	330	360
Voltage	12, 24, 120, 230 VAC/VDC	12, 24, 120, 230 VAC/VDC
Timing range	1-10 seconds 1-60 seconds 1-180 seconds 1-300 seconds	0.1-102.3 seconds 1-1023 seconds 1-1023 minutes
Accuracy	± 5%	± 2%
Repeatability	± 2%	± 0.1%
Recycle time	100 ms	20 ms
Contacts	DPDT	DPDT
Contact rating	10A @ 120VAC resistive	7.5A @ 120VAC resistive
Weight	5 oz max	5 oz max
Transient protection	2500 VRMS for 10 ms	
Operating temperature	-20° to +60° C	
Storage temperature	-30° to +85° C	
Humidity tolerance	0-97% w/o condensation	
Agency approval	UL Recognized Component File No. 60400 (Model 360 at supply voltages of 120VAC or less)	

ORDERING INFORMATION

Specify model number, voltage, and timing range/timing interval.

Examples: 330-120V-300

360-230V-1 minute

WIRING



SIGNALINE®
DIV OF TIME MARK CORP

11440 EAST PINE
TULSA OKLAHOMA 74116
(800) 862-2875
in OK (918) 438-1220

TITLE	RELAY, OPERATE DELAY	Dimensions are in inches unless otherwise specified. Drawings show no power applied.
© TIME MARK CORP. 1987	FORM NO.	87A152 12/87

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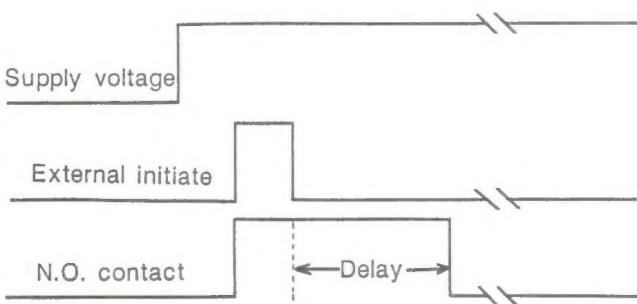
Models 331 & 361 RELEASE DELAY RELAY

DESCRIPTION

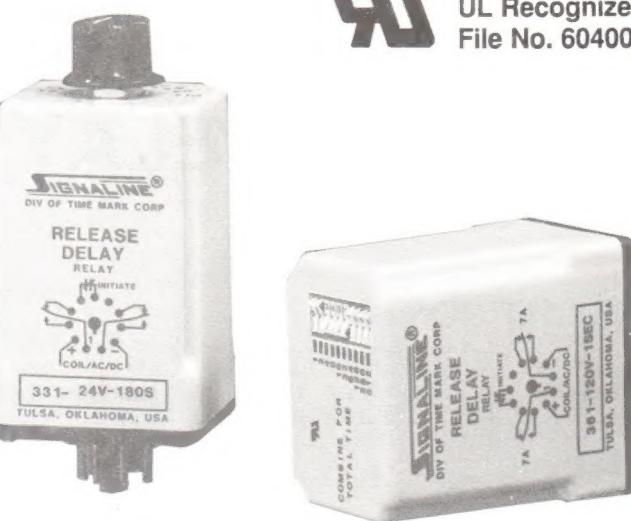
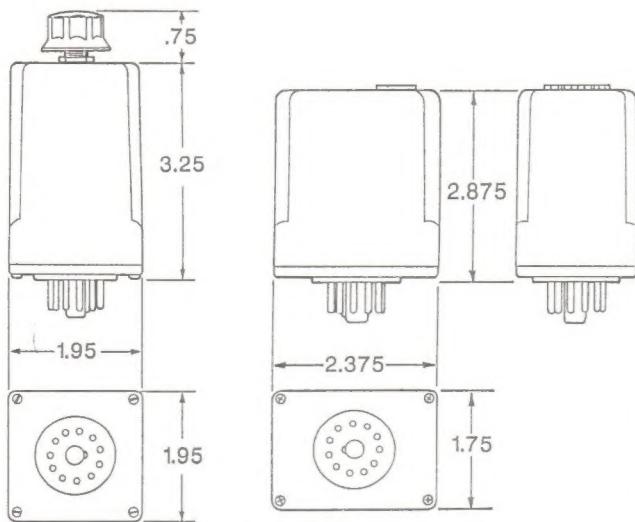
331 and 361 Release Delay Relays are designed for new or replacement applications. Functionally interchangeable, these timers can be used in delay-off circuits, batch processing circuits, and other applications requiring a remote-triggered timer. The 331 is a low cost R-C timer, while the 361 is a high accuracy, digital timer. In both units a solid-state timing circuit drives a double-pole, double-throw (DPDT) electromechanical relay. Both timers are available in a variety of voltage and timing ranges. The 331 is UL Recognized in all voltage ranges; the 361 is UL Recognized at supply voltages of 120V or less.

OPERATION

The supply voltage must be constantly applied. When the control switch is closed the internal relay will energize. Timing begins when the control switch is opened. The delay can be reset by reclosing the control switch. On completion of the delay period, the relay will de-energize.



DIMENSIONS



UL Recognized
File No. 60400

SPECIFICATIONS

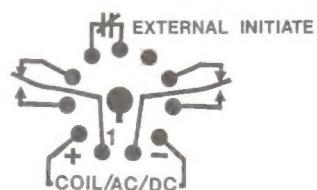
Model no.	331	361
Voltage	24, 120 VAC/VDC	12, 24, 120, 230 VAC/VDC
Timing range	1-10 seconds 1-60 seconds 1-180 seconds 1-300 seconds	0.1-102.3 seconds 1-1023 seconds 1-1023 minutes
Accuracy	± 5%	± 2%
Repeatability	± 2%	± 0.1%
Recycle time	100 ms	20 ms
Contacts	DPDT	DPDT
Contact rating	10A @ 120VAC resistive	7.5A @ 120VAC resistive
Weight	5 oz max	5 oz max
Transient protection	2500 VRMS for 10 ms	
Operating temperature	-20° to +60° C	
Storage temperature	-30° to +85° C	
Humidity tolerance	0-97% w/o condensation	
Agency approval	UL Recognized Component File No. 60400 (Model 361 at supply voltages of 120VAC or less)	

ORDERING INFORMATION

Specify model number, voltage, and timing range/timing interval.

Examples: 331-24V-180 361-120V-1 second

WIRING



SIGNALINE® DIV OF TIME MARK CORP		11440 EAST PINE TULSA OKLAHOMA 74116 (800) 862-2875 in OK (918) 438-1220
TITLE	RELAY, RELEASE DELAY	Dimensions are in inches unless otherwise specified. Drawings show no power applied.
© TIME MARK CORP. 1987	FORM NO.	87A153 12/87

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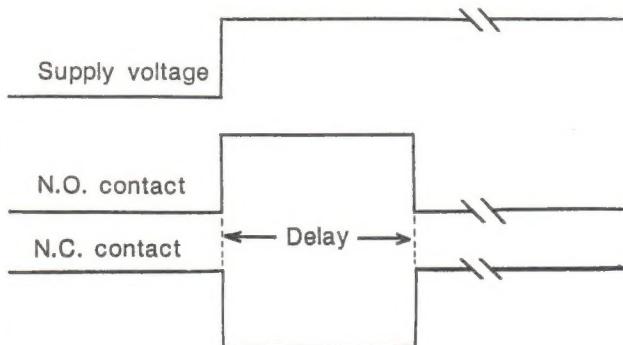
Models 332 & 362 SINGLE SHOT RELAY

1 DESCRIPTION

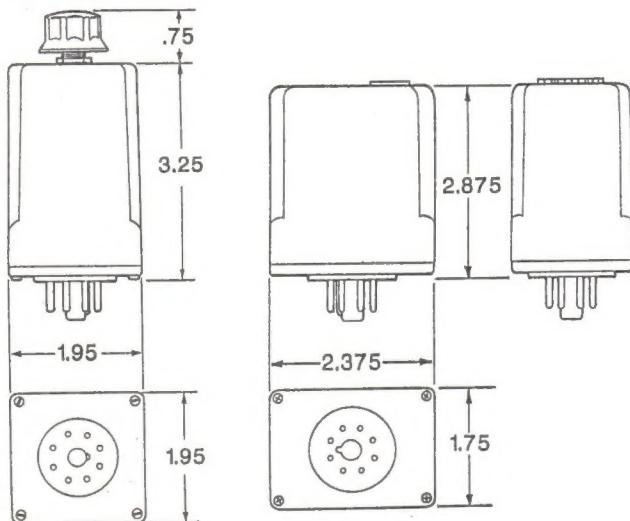
332 and 362 Single Shot Timers are designed for a wide variety of industrial applications. Examples include automatic and batch control circuits where the relay needs to be energized only for a specific length of time after start-up. The 332 is a low cost, knob adjustable, R-C timer. The 362 is an intermediate priced, high accuracy, digital timer. In both timers a solid-state timing circuit drives a double-pole, double-throw (DPDT) electromechanical relay. Both timers are available in a variety of voltage and timing ranges and are functionally interchangeable. The 332 is UL Recognized in all voltage ranges; the 362 is UL Recognized at supply voltages of 120V or less.

2 OPERATION

The internal relay energizes immediately upon application of supply voltage. Upon completion of the delay period, the internal relay will de-energize. Supply voltage must be removed to reset the timer.



3 DIMENSIONS



2 SPECIFICATIONS

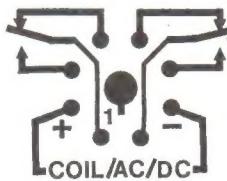
Model no.	332	362
Voltage	24, 120 VAC/VDC	12, 24, 120, 230 VAC/VDC
Timing range	1-10 seconds 1-60 seconds 1-180 seconds 1-300 seconds	0.1-102.3 seconds 1-1023 seconds 1-1023 minutes
Accuracy	$\pm 5\%$	$\pm 2\%$
Repeatability	$\pm 2\%$	$\pm 0.1\%$
Recycle time	100 ms	20 ms
Contacts	DPDT	DPDT
Contact rating	10A @ 120VAC resistive	7.5A @ 120VAC resistive
Weight	5 oz max	5 oz max
Transient protection	2500 VRMS for 10 ms	
Operating temperature	-20° to +60° C	
Storage temperature	-30° to +85° C	
Humidity tolerance	0-97% w/o condensation	
Agency approval	UL Recognized Component File No. 60400 (Model 362 at supply voltages of 120VAC or less)	

3 ORDERING INFORMATION

Specify model number, voltage, and timing range/timing interval.

Examples: 332-230V-60 362-120V-.1 second

4 WIRING



SIGNALINE®
DIV OF TIME MARK CORP

11440 EAST PINE
TULSA OKLAHOMA 74116
(800) 862-2875
in OK (918) 438-1220

TITLE	RELAYS, SINGLE SHOT	Dimensions are in inches unless otherwise specified. Drawings show no power applied.
© TIME MARK CORP. 1987	FORM NO.	87A154 12/87

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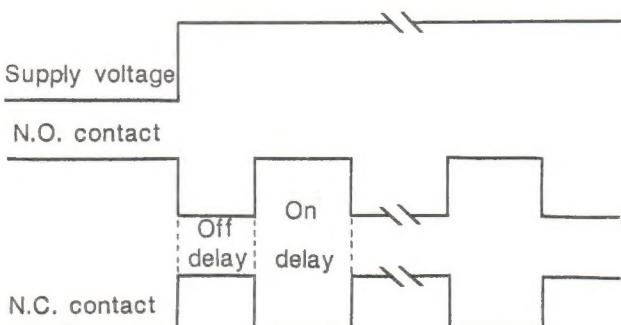
Models 338 & 368 RECYCLE TIMER

DESCRIPTION

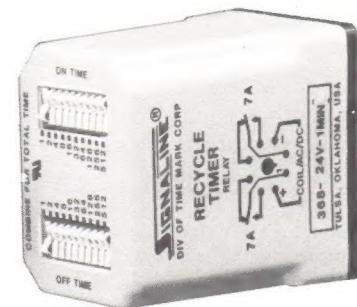
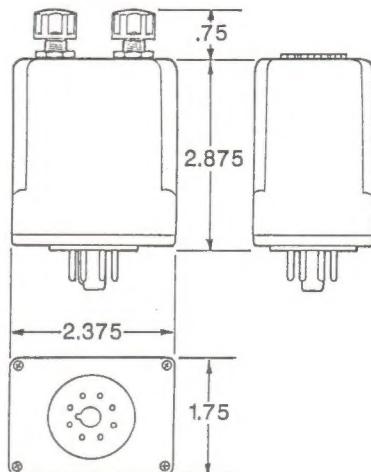
338 and 368 Recycle Timers are used to cycle a load on and off or to cycle between two loads. The On and Off cycles are independently adjustable on both timers. The 338 is a low cost, knob adjustable, R-C timer. The 368 is an intermediate priced, high accuracy, digital timer. In both units a solid-state timing circuit drives a double-pole, double-throw (DPDT) electromechanical relay. Both timers are available in a variety of voltage and timing ranges. The timers are functionally identical and may be interchanged based on timing requirements. The 338 is UL Recognized in all voltage ranges; the 368 is UL Recognized at supply voltages of 120V or less.

OPERATION

When supply voltage is applied, the Off cycle begins timing. Upon completion of the delay, the internal relay will energize and the On cycle begins timing. The timer will continue cycling until the supply voltage is removed. On and Off cycles can be symmetrical or asymmetrical.



DIMENSIONS



UL Recognized
File No. 60400

SPECIFICATIONS

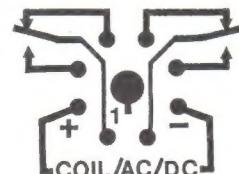
Model no.	338	368
Voltage	12, 24, 120 VAC/VDC	12, 24, 120, 230 VAC/VDC
Timing range	.3-30 seconds .6-60 seconds 1.8-180 seconds 3-300 seconds	0.1-102.3 seconds 1-1023 seconds 1-1023 minutes
Accuracy	±5%	±2%
Repeatability	±2%	±0.1%
Recycle time	100 ms	20 ms
Contacts	DPDT	DPDT
Contact rating	10A @ 120VAC resistive	7.5A @ 120VAC resistive
Weight	6 oz max	5 oz max
Transient protection	2500 VRMS for 10 ms	
Operating temperature	-20° to +60° C	
Storage temperature	-30° to +85° C	
Humidity tolerance	0-97% w/o condensation	
Agency approval	UL Recognized Component File No. 60400 (Model 368 at supply voltages of 120VAC or less)	

ORDERING INFORMATION

Specify model number, voltage, and timing range/timing interval.

Examples: 338-120V-180 368-120V-1 minute

WIRING



SIGNALINE® DIV OF TIME MARK CORP		11440 EAST PINE TULSA OKLAHOMA 74116 (800) 862-2875 in OK (918) 438-1220
TITLE TIMERS, RECYCLE		Dimensions are in inches unless otherwise specified. Drawings show no power applied.
© TIME MARK CORP. 1987		FORM NO. 87A155 12/87

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Model 363

OPERATE DELAY RELAY

- One timed contact and one instant contact
- Pin compatible with all standard relays

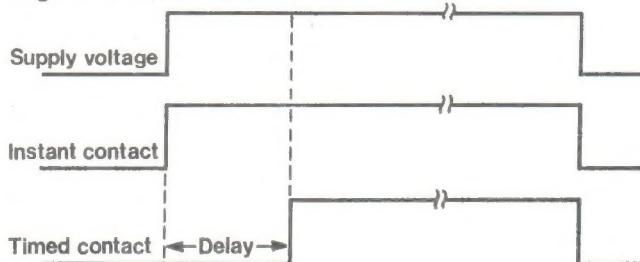


DESCRIPTION

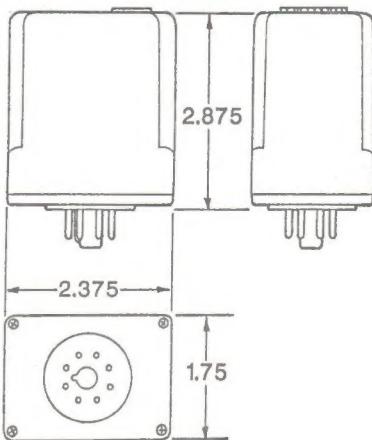
The Model 363 Operate Delay Relay is an industrial grade time delay relay. The device is a high-accuracy, solid-state timing circuit driving two electromechanical relays. One relay transfers when the supply voltage is applied, the other after an adjustable delay period. The Model 363 uses ten switches for timing selection, providing timing increments from 1 to 1023 increments. Available time increments are 0.1 second (1-102.3 seconds), 1 second (1-1023 seconds) or 1 minute (1-1023 minutes). Special timing or voltage ranges are available by special order.

OPERATION

When supply voltage is applied contacts 1-3-4 transfer immediately, and the time delay begins. Upon completion of the delay period, contacts 8-6-5 transfer. Both relays remain energized until power is removed.



DIMENSIONS



SPECIFICATIONS

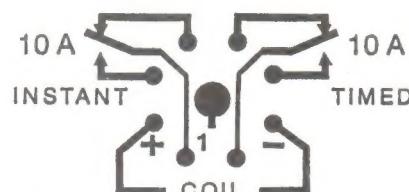
Supply voltage	
AC	12, 24, 120 V
DC	12, 24, 110 V
Transient protection	2500 VRMS for 10 ms
Timing range	0.1-102.3 seconds 1-1023 seconds 1-1023 minutes
Accuracy	± 2%
Repeatability	± 0.1% (fixed conditions)
Recycle time	20 ms
Contacts	2 each SPDT
Contact rating	10A @ 120 VAC resistive
Operating temperature	-20° to +60° C
Storage temperature	-30° to +85° C
Humidity tolerance	0-97% w/o condensation
Weight	5 oz max

ORDERING INFORMATION

Specify model number, voltage, and timing range/timing interval.

Examples: 330-120V-300 360-230V-1 minute

WIRING



SIGNALINE®
DIV OF TIME MARK CORP

11440 EAST PINE
TULSA OKLAHOMA 74116
(800) 862-2875
in OK (918) 438-1220

TITLE	RELAY, OPERATE DELAY W/AUX. CONTACT	Dimensions are in inches unless otherwise specified. Drawings show no power applied.
© TIME MARK CORP. 1987	FORM NO.	87A156 11/87

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Model 339

ON/OFF DELAY RELAY

- Provides on delay and true off delay
- Separate delay adjustments
- Wiring configuration compatible with standard relays
- Timing ranges up to 5 minutes on and off

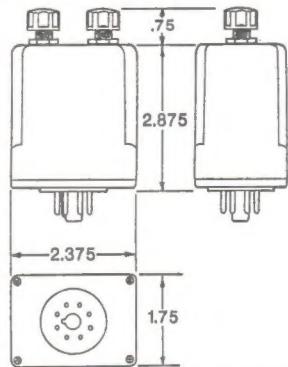
DESCRIPTION

The Model 339 is an electronic time delay relay which provides two functions: on delay and true off delay. The true off delay (relay remains energized for a delay period when power is removed) is provided by means of an internal latching relay. Each time delay, on and off, is separately adjustable to a maximum of five minutes on or off. The Model 339 uses the same pin-out configuration as standard time delay and general purpose relays. It can be used in new or replacement applications for thermal, pneumatic, or spring-wound timers, or instead of general purpose relays or other electronic timers.

OPERATION

When voltage is applied to the Model 339, the relay will delay for the 'on' period, then transfer its output contacts (normally open contacts will close). When voltage is removed the Model 339 will remain energized for the delay 'off' period, then drop-out.

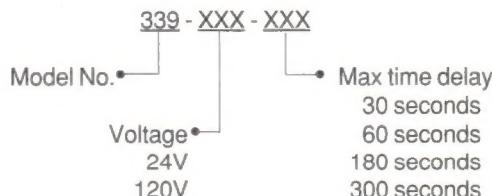
DIMENSIONS



SPECIFICATIONS

Operating voltage	20-28 VAC/DC, 24VAC nominal
	90-140 VAC/DC, 120VAC nominal
Power consumption	24 volt: 1 watt max
	120 volt: 4 watts max
Transient protection	2500 VRMS for 10 ms
Polarity protection	DC versions only
Timing ranges (on and off)	0.3 to 30 seconds
	0.6 to 60 seconds
	1.8 to 180 seconds
	3 to 300 seconds
Timing accuracy	± 5%
Repeatability (fixed conditions)	± 2%
Output configuration	DPDT
Contact rating (resistive)	10 A @ 120 VAC/30 VDC
	(inductive) 7 A @ 120 VAC/30 VDC
Expected life (mechanical)	50,000,000 operations
	(electrical) 500,000 at rated load
Operating temperature	-20 to +60° C
Humidity tolerance	97% w/o condensation
Case material	ABS plastic
Weight	7 oz.

ORDERING INFORMATION



SIGNALINE® DIV OF TIME MARK CORP		11440 EAST PINE TULSA OKLAHOMA 74116 (800) 862-2875 in OK (918) 438-1220
TITLE	MODEL 339 ON/OFF DELAY RELAY	Dimensions are in inches unless otherwise specified. Drawings show no power applied.
© TIME MARK CORP. 1987	FORM NO.	87A110 7/87

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Model 340

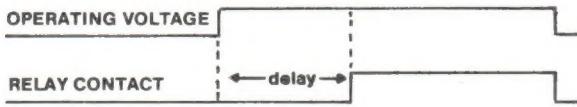
Panel Mount OPERATE DELAY RELAY

- Solid- State Timing Circuit
- Timing & Timed Out Indicators

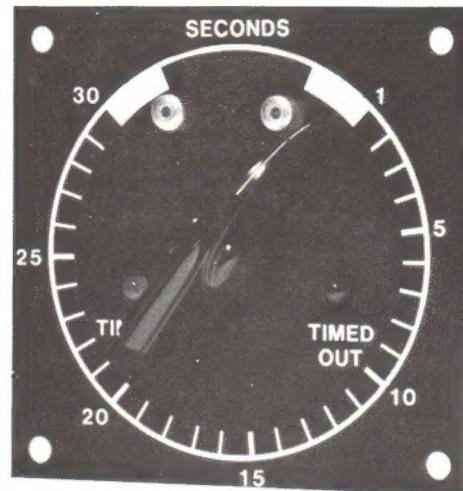
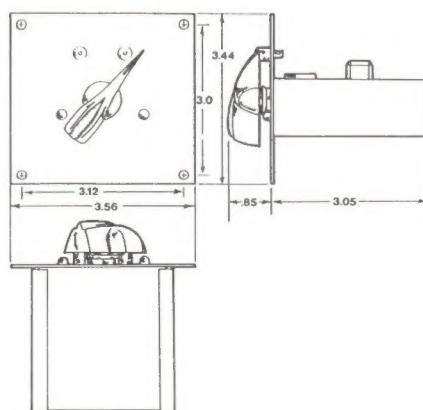
DESCRIPTION

The 340 series Operate Delay Relays are industrial grade panel mounted timers. Wiring connections are made to a terminal strip. The timing circuit is completely solid state, driving an electromechanical relay. To set a time, simply set the knob to the desired delay and apply power. Remove power to reset the timer. Indicators are provided to indicate when the relay is timing and when it has timed out. The adjustment knob does not move during operation and only needs to be moved to change the delay period.

OPERATION: The delay period begins on application of power. On completion of the delay the relay will transfer its contacts.



DIMENSIONS

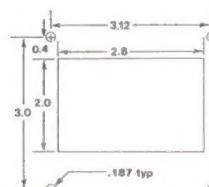


SPECIFICATIONS

Input Voltage.....	12, 24, 120, 230 VAC
	12, 24, 120 VDC
Timing Ranges.....	1 - 10 seconds 1 - 30 seconds 1 - 60 seconds 1 - 180 seconds 1 - 300 seconds
Accuracy.....	±5%
Repeatability.....	±2%, fixed conditions
Recycle Time.....	100 msec
Contact.....	SPDT
Contact Rating.....	10 A at 120 VAC Resistive
Transient Protection.....	2500 VRMS for 10 msec
Reverse Polarity Protection.....	Yes
Operating Temperature.....	-20° to +60° C
Storage Temperature.....	-30° to +85° C
Termination.....	Screw Terminals, Panel Mount

ORDERING INFORMATION

340 - 120 V - 30
Model # Voltage Maximum Timing Range



Panel cutout

SIGNALINE
DIV OF TIME MARK CORPORATION

11440 East Pine Street
Tulsa, Oklahoma 74116
800 / 862 - 2875
In Okla. 918 / 438 - 1220
FAX: 918 / 437 - 7584

TITLE:

RELAY
OPERATE DELAY
MODEL 340

Unless Otherwise Specified
Dimensions Are In Inches
Drawings Show No Power Applied
© Copyright TMC 1986

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Models 349 & 349-9

override timers

- Timer mounts in standard wall switch box
- 2-hour and 9-hour versions standard

DESCRIPTION

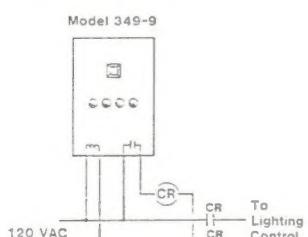
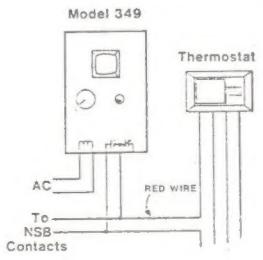
The 349 series timers are one-shot timers. They are designed as lighting controls for limited-use areas or as override controls for energy management applications. The timers are designed to mount in a standard wall switch box.

The standard 349 is a two hour timer adjustable from 20 minutes to 2 hours. When the initiate button is pressed the internal relay energizes, turning the load on. After the delay the relay de-energizes, turning the load off.

The 349-9 is a nine hour timer. When the initiate button is pressed the internal relay energizes for one hour, turning the load on. Each additional press of the button adds one hour to the delay, up to a maximum of 9 hours. A tenth press of the button de-energizes the relay, turning the load off. Binary numbered indicator lights show remaining time delay.

Special timing ranges, voltage ranges or adjustment configurations are available on request.

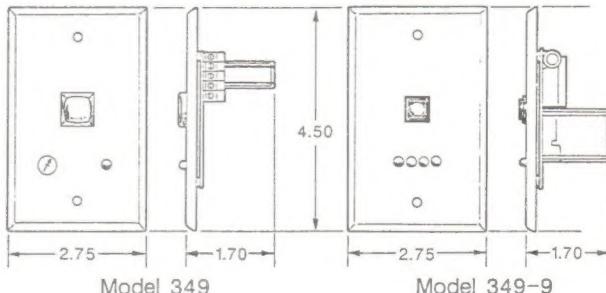
TYPICAL APPLICATIONS



SPECIFICATIONS

Model #	349	349-9
Supply Voltage	24 VAC ± 20%	24 VAC ± 20%
	120 VAC ± 20%	120 VAC ± 20%
	277 VAC ± 10%	277 VAC ± 10%
Timing range	20 - 120 minutes	1 - 9 hours
Timing accuracy	± 2% at 2 hours	± 2% per hour
Frequency	50 - 400 Hz	
Power consumption	2 Watts max	
Transient protection	2500 VRMS for 10 ms	
Recycle time	100 ms	
Output contacts	SPDT	
Contact rating	10A at 120 VAC resistive	7A at 277 VAC resistive
Weight	2.5 oz.	

DIMENSIONS



ORDERING INFORMATION

349-X - XX - XX

Model # and timing

(blank) - 2 hour

9 - 9 hour

X - Special timing range*

Options

(blank) - push button

KO - Key operated*

RA - Rear timing adjust*

Voltage

24 - 24 VAC

120 - 120 VAC

277 - 277 VAC

* Special pricing - consult the factory

	11440 EAST PINE TULSA OKLAHOMA 74116 (800) 862-2875 in OK (918) 438-1220
TITLE MODELS 349 / 349-9 OVERRIDE TIMERS	Dimensions are in inches unless otherwise specified. Drawings show no power applied.
FORM NO.	87A175